

SAFETY BELT RETRACTOR HAVING ROTATION DAMPENER OF
COMPACT CONSTRUCTION

Patent Claims

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1. Safety belt retractor, especially in motor vehicles, having a belt shaft as a carrier for a belt strap wound thereon, as well as a blocking mechanism, for the belt shaft, that can be actuated in a vehicle sensitive and/or belt strap sensitive manner, and with a force limiting device that becomes effective in the event of a blocking, wherein the force limiting device comprises a housing that is filled with a viscous medium and has at least one fixed contour and a counter contour that is coupled to the belt shaft in the event of a blocking, so that due to the relative movement of contour and counter contour, the medium is forced between the associated surfaces, characterized in that a central shaft (17) is disposed on an end of the belt shaft (12), extends around the belt shaft (12), and in the event of an actuation can be coupled with the belt shaft (12) via a radially deflectable ratchet wheel (16) that is mounted on the belt shaft (12) as the blocking mechanism, wherein the central shaft, together with an outer housing wall (21), forms the housing (13) of the force limiting
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device, and in that on a radial shoulder (18) that forms an end wall of the housing (13), the central shaft (17) is provided with at least one socket (25) that extends in a peripheral direction and projects axially into the inner space 22 of the housing that is filled with the viscous medium, wherein the at least one socket cooperates with a counter socket (27) that is disposed in the oppositely arranged cover (23) that is secured to the housing, with the counter socket being radially offset from, and having a corresponding shape to, the socket (25).

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2. Safety belt retractor according to claim 1, characterized in that at least two sockets (25) are provided that project axially into the inner space 22 of the housing and between which engage counter sockets (27) that, with a corresponding shape, are disposed on the cover 23.

3. Safety belt retractor according to claim 1 or 2, characterized in that the sockets (25) are a component of a socket type piston (24) that is disposed in the inner space 22 of the housing and is positively connected with the central shaft 17.

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4. Safety belt retractor according to one of the claims 1 to 3, characterized in that the sockets (25) extend over a partial periphery of the central shaft (17).
5. Safety belt retractor according to claim 4, characterized in that two oppositely disposed socket sections are formed.
6. Safety belt retractor according to claim 1, characterized in that the central shaft (17) is supported against the housing wall (21) of the housing (13) of the force limiting device via an interposed bearing ring (28).
7. Safety belt retractor according to one of the claims 1 to 6, characterized in that a bearing ring (28) is disposed between the central shaft (17) and the cover (23) of the housing (13) of the force limiting device, which cover is secured to the housing and extends around the central shaft.
8. Safety belt retractor according to one of the claims 1 to 7, characterized in that that end of the housing wall (21) that extends around the cover (23) is secured via radially projecting projections (30) that, in the manner of a bayonet closure,

engage in receiving means formed on the housing (11) of the belt retractor.